

30. The process according to claim 29, characterized in that iron is extracted from the reaction product and that metals and rare earths deposited in the reaction product are separated off.

31. The process according to claim 29, characterized in that the metals and rare earths are selected from the group consisting of gold, silver, platinum-group elements, cobalt, nickel, and zinc.

32. The process according to claim 31, characterized in that the metals are leached out using a leaching or bioleaching process, and sulfur is extracted from the covellite, pyrite, accompanying sulfides by a further process.

33. The process according to claim 29, characterized in that said conversion is performed in a rotary-tube furnace.

34. The process according to claim 29, characterized in that said conversion is performed at a temperature of between room temperature and 501 °C.

35. The process according to claim 29, characterized in that said conversion is performed at a temperature at 410 °C.

36. The process according to claim 29, characterized in that said conversion is promoted by microwave irradiation.

37. The process according to claim 29, characterized in that said conversion is effected for a period of from 0.5 h to 24 h.

38. The process according to claim 29, characterized in that said conversion is effected for a period of 2 h.

39. The process according to claim 29, characterized in that sulfur is added in stoichiometric amounts.

40. The process according to claim 29, characterized in that sulfur is added in a solid state and the conversion is effected under a pressure of up to 10 bar.

41. The process according to claim 39, characterized in that said conversion proceeds in an atmosphere saturated with sulfur vapor.

42. The process according to claim 29, characterized in that sulfur is added in a gaseous state and the conversion is effected under reduced pressure.

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43. The process according to claim 29, characterized in that the conversion is effected with a sulfur plasma.

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44. A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

- the ores are converted in a rotary-tube furnace to a reaction product comprising covelline, pyrite, and accompanying sulfides by adding sulfur and additives in a conversion step interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

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45. A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

- the ores are converted to a reaction product comprising covelline, pyrite, and accompanying sulfides by adding sulfur and additives in a conversion step, promoted by microwave irradiation, interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

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A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

- the ores are converted to a reaction product comprising covelline, pyrite, and accompanying sulfides by adding sulfur in a solid state and additives in a conversion step effected under a pressure of up to 10 bar interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

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A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

- the ores are converted in to a reaction product comprising covelline, pyrite, and accompanying sulfides by adding sulfur in stoichiometric amounts and additives in a conversion step that proceeds in an atmosphere saturated with sulfur vapor interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

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A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

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- the ores are converted in to a reaction product comprising covellite, pyrite, and accompanying sulfides by adding sulfur in a gaseous state and additives in a conversion step effected under reduced pressure interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

~~49.~~ ²¹ A process for extracting metals from chalcopyrite-containing ores comprising leaching steps of microbiological or chemical nature for leaching out the metals, characterized in that

- the ores are converted to a reaction product comprising covellite, pyrite, and accompanying sulfides by adding sulfur and additives in a conversion step effected with a sulfur plasma interposed prior to the leaching steps, and
- copper and other metals, precious metals and rare earths contained in the reaction product are extracted.

REMARKS

Claims 29-49, presented hereby in place of claims 15-28, are pending.

Claims 29 and 44-49 contain subject matter of claims 18, 20, 22, and 25-28, respectively rewritten as independent claims and to overcome the section 112 rejections of record, as explained below.